1 - Expenses & Budget

Content Area: **Mathematics**
Course(s):
Time Period: **Marking Period 1**
Length: **20 Days**
Status: **Published**

Summary

Introduction: Unit 1 will focus on defining types of expenses and developing budgeting skills. Students will analyze how expense definitions can skew a budget either higher or lower, and how that could theoretically impact their ability to invest in other aspects of their lives such as auto, home, and retirement (these topics will be discussed later in the class and will be referred back to the budget created in this unit).

Revision Date: July 2026

Essential Questions/Enduring Understandings

Essential Questions:

- What do you need? What do you want?
- What will it cost to get there?
- How can graphs help describe frequency distributions?
- How can past trends predict future occurrences?
- How much will it cost to run the utilities in your home?
- How can you visualize your budget?
- How do you plan for expenses, reduce debt, and grow savings?

Enduring Understanding:

- Determine the mean, median, mode, and outliers of a data set and frequency distribution table.
- Compute and interpret z scores, raw scores, and standard deviation.
- Determine and interpret cumulative and relative frequencies, as well as percentiles.
- Construct scatter plots and determine linear regression models along with its correlation coefficient.
- Compute the cost of utilities and compare energy saving appliances.
- Visualize and interpret a budget using circle graphs, bar graphs, line graphs, and budget line graphs.

- Develop and interpret a cash flow chart, frequency budget plan, and year-long expense budget plan.

Objectives

Students will know: (content area knowledge)

- How to calculate measures of central tendency.
- How to calculate z scores, raw scores, and percentiles.
- How to differentiate between cumulative and relative frequencies.
- How to construct and interpret scatter plots and linear regression equations.
- How to construct and interpret multiple types of graphs.
- How to calculate the central angle of a circle graph's portions and apply it to calculations.

Students will be skilled at: (skills)

- Applying central tendency values to a group of data.
- Understanding frequency distributions.
- Predict how previous trends affect the future.
- Calculating costs within a home and how this fluctuation affects the budget.
- Visualizing a budget in multiple graph options.

Learning Plan

- Warm - Up: Students will complete either the warm-up in the textbook for a specific section, or a related problem from the teacher. A timer at the front of the room will maintain timeframes of this activity. When the timer sounds, the students are to hand their work to the teacher for a grade.
- Homework: While the warm-up is being completed, the teacher will walk the room to check homework has been completed. Teacher will check in individually with students who did not fully complete the assignment. Teacher will also take time to ask students with completed assignments if there are specific problems that they would like discussed.
- Discussion: Teacher will go over the warm-up as well as requested homework problems. This will allow time for students to clarify questions on material that has already been covered, and the warm-up gives students a glimpse into the material that will be covered in the new lesson. Teacher will be actively listening during this discussion for signs that students need additional time with previous

information before continuing with the next lesson.

- Lesson: Teacher will lead students through discovering how to apply their prior mathematical knowledge into new content. Students will lead the lesson on how much they remember about the math concept before the application. Once students have a complete knowledge of the concept, teacher will encourage students to apply the concept to the real world situation. Calculations will be completed by students alongside teacher, then within small groups to compare with each other, and finally independently. During the group work time, teacher will circulate the room to listen to each group's discussion of the lesson, monitoring if specific students are struggling and encouraging them. A timer at the front of the room will maintain timeframes of these discussions. During independent work time, teacher will circulate the room to monitor students' progress, especially the aforementioned struggling students.

- Free Work: If time allows, students will be encouraged to spend the rest of the period working on either their homework assignment or progressing on the main project for the unit.

Assessment

Formative Assessments:

- Prior math concept assessments
- Warm-ups

Summative Assessments:

- Chapter assessments
- Unit assessments
- Unit projects

Benchmark Assessments:

- Informal observations
- Small group observations
- Oral and written explanations of reasoning
- Homework completion

Alternative Assessments

- Group discussions
- Performance tasks

Materials

Core instructional materials: Core Book List including

- Financial Algebra: Advanced Algebra with Financial Applications
- Authored by Robert Gerver, Richard Sgroi

Supplemental materials:

- Financial Algebra website
- Edia website
- Khan Academy website

Standards

English Language Development Standard 3: Language for Mathematics: English language learners communicate information, ideas and concepts necessary for academic success in the content area of mathematics.

This unit further reflects the goals of the Holocaust Education mandate where students are able to identify and analyze applicable theories concerning human nature and behavior; understand that genocide is a consequence of prejudice and discrimination; understand that issues of moral dilemma and conscience have a profound impact on life; and understand the personal responsibility that each citizen bears to fight racism and hatred whenever and wherever it happens.

Students will focus on equity, inclusion, and tolerance when analyzing the comparison of various quantities regarding characteristics of people. Equality will also be highlighted which can be associated with both numerical representations and the connection between people. This can be associated with treating people fairly and equality.

Information Literacy:

This unit challenges students to locate, evaluate, and use information effectively. Information literacy includes, but is not limited to, digital, visual, media, textual, and technological literacy. Lessons may include the research process and how information is created and produced; critical thinking and using information resources; research methods, including the difference between primary and secondary sources; the difference between facts, points of view, and opinions, accessing peer-reviewed print and digital library resources; the economic, legal, social, and ethical issues surrounding the use of information.

9.1.8.CR	Civic Financial Responsibility
1	Make sense of problems and persevere in solving them
L.SS.11–12.1	Demonstrate command of the system and structure of the English language when writing

	or speaking.
S.ID.A	Summarize, represent, and interpret data on a single count or measurement variable
4	Model with mathematics
S.ID.B	Summarize, represent, and interpret data on two categorical and quantitative variables
9.2.12.CAP.5	Assess and modify a personal plan to support current interests and post-secondary plans.
9.2.12.CAP.6	Identify transferable skills in career choices and design alternative career plans based on those skills.
6	Attend to precision
3.a	Identify complex, interdisciplinary, real-world problems that can be solved computationally.
3.b	Decompose complex real-world problems into manageable sub-problems that could integrate existing solutions or procedures.
S.ID.C	Interpret linear models
A.CED	Creating Equations
9.2.12.CAP.13	Analyze how the economic, social, and political conditions of a time period can affect the labor market.
A.REI	Reasoning with Equations and Inequalities
S.MD.B.5	Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values.
9.1.8.PB	Planning and Budgeting
9.1.8.PB.1	Predict future expenses or opportunities that should be included in the budget planning process.
9.1.8.PB.7	Brainstorm techniques that will help decrease expenses including comparison shopping, negotiating, and day-to-day expense management.

Suggested Strategies for Modification

Suggested Strategies for Modification for Financial Algebra